REMARKS

With the entry of the amendments, claims 18, 20-23 and 42-47 are pending in this application. Favorable consideration is requested.

To further distinguish the claimed invention from anything disclosed in the cited Fujiwara reference, claim 18 has been amended as supported by claim 19 (now cancelled) and the specification and figures, e.g., pages 10 and 12 of the specification and the corresponding figures. Some other claims have been amended to only identify porous silicon (which is not disclosed in Fujiwara). New claims 46-47 have been added as supported by the specification, e.g., the text bridging pages 5-6 of the specification and the corresponding figures. No new matter has been added.

In paragraph nos. 4 and 5 on pages 2 and 3 of the Office Action, the drawings stand objected to as allegedly failing to comply with the USPTO statutes because the reference characters 113, 123 and 133 have each been used to designate the "spacer layer." In response, applicant requests the withdrawal of this objection because those numbers and their reference to the "spacer layer" in various figures simply relate to various embodiments, i.e., different reference numbers are used for different embodiments. As permitted by USPTO practice and drawing practices around the world, different reference numbers can be utilized on different figures in order to assist with the showing of different embodiments. Applicant also notes that it has not received any similar objection in its other corresponding cases around the world, nor was the objection previously lodged in this US application even though earlier Office Actions issued in this case. For at least the foregoing reasons, applicant requests the withdrawal of the objection.

In paragraph nos. 8-20 on pages 3-7 and paragraphs 27-32 on pages 9-10 of the Office Action, claims 18-23 and 42-45 stand rejected as allegedly being anticipated (lacking novelty) over Fujiwara. Applicant traverses the rejection for at least the following reasons and also notes that the rejection is moot in view of the claim amendments.

As noted above, the claim amendments further distinguish the applicant's invention from anything disclosed in Fujiwara.

Moreover, applicant respectfully disagrees with the Examiner's opinion in paragraph 30 where it is alleged that Fujiwara in Figures 2 and 3A-B show pores. This is not correct. Fujiwara's Figure 2 shows nanowires embedded in an insulator. See paragraph 0019 of Fujiwara. Fujiwara's Figure 3b shows two parts with significantly different conductivities, a conductor part 33a having low resistivity, and an insulator part 33b having high resistivity. See paragraph 0022 of Fujiwara, i.e., "a conductor part 33a having low resistivity and an insulator part 33b having high resistivity, as depicted schematically in FIG. 3b." Indeed, there is **no mention of any pore or pores** anywhere in the Fujiwara document. Nor can any pore or geometry can be derived from the Fujiwara figures that are a very approximate representation of the microstructure of the Fujiwara device.

Further, although Fujiwara is quite vague about the deposition process, it is clear that a layered structure is grown in Fujiwara. See Fujiwara paragraph 0022. Only co-deposition of insulant and metal is mentioned explicitly as a deposition process, but also alternate, unspecified, methods, produce a layered structure for the spacer. Thus, even the process described by Fujiwara does not create pores. Insulating and conducting areas grow together, contemporarily, and in subsequent layers.

In contrast, applicant notes that it is a fact that a nanoporous matrix has different dielectric properties with respect to a matrix grown together with the metal wires. In support, applicant directs the Examiner's attention to the attached publication from *Radiophysics and Quantum Electronics*, and will supply additional pages of this reference if necessary.

With respect to the claimed invention and a porous material obtained by electrochemical assembly, the product is intrinsically different than a layered matrix or compound grown by co-deposition of insulant and conductor as in Fujiwara. In contrast to anything disclosed in Fujiwara, the claimed invention involves a crystalline matrix with pores. Nothing like this is disclosed in Fujiwara. In Fujiwara, multiple layers of insulant-metal mixture are stacked, thereby resulting in an even further different dielectric characteristic and behaviour of the final product.

As noted in some of the claims, the invention concerns porous silicon. Porous silicon is not disclosed in Fujiwara, which only mentions the use of oxides and nitrides. As the applicant has discovered, using porous silicon is advantageous because it has good dielectrical properties and can be integrated into a specialized spin-valve. In this regard, a person skilled in the art would not receive any suggestion from the co-depositions of insulant and metal of Fujiwara to use porous silicon or develop the claimed invention.

Finally, applicant still maintains that nanowires grown in the pore of a porous template by electrodeposition have a crystalline order and an easy axis of magnetization. See, e.g., the previously supplied article: M. Darques, L. Piraux, A. Encinas, P. Bayle-Guillemaud, A. Popa and U. Ebels, Appl. Phys. Lett. **86**, 072508, (2005). In this regard, applicant's new claims 46 and 47 specifically require that *"the pores contain metallic nanoparticles in column structure*

obtained by electrodeposition." Such structures are quite different than anything disclosed in Fujiwara.

Nanowires grown in the pore of porous template, for instance, by electrodeposition, are different from nanowires grown by other methods, i.e., Fujiwara codeposition. The (nanometric) geometrical constraints imposed by the nanopores determine specific types of growth of the wires, according to deposition conditions, allowing control of the crystalline growth through the control of the deposition parameters (electrodeposition in particular). Again, attention is directed to M. Darques, L. Piraux, A. Encinas, P. Bayle-Guillemaud, A. Popa and U. Ebels, Appl. Phys. Lett. **86**, 0725008, (2005), which depicts the way electrodeposition in the nanopores can be controlled for tailoring the crystal structure of the filling material by the process parameters, e.g., the pH of the electrolyte, in order to obtain anisotropy. It is largely acknowledged that the properties of anisotropy of materials, which are of utmost importance in determining the properties of the spacer layer, are tightly linked to their crystal structure. In other words, a nanoporous material with nanowires grown in the nanopores has a complex combination of electrical properties and, most important, magnetical properties that cannot be replicated by the composite described by Fujiwara. Thus, for these additional reasons, there is no anticipation.

In view of the foregoing information, applicant requests the withdrawal of the anticipation rejection because the cited reference does not disclose each and every feature in the claims.

For at least the reasons stated above, applicant submits that this application is in condition for allowance. A notice to that effect is earnestly solicited.

Respectfully submitted,

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